

REMARKS

The Office Action dated July 28, 2008 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Applicants gratefully acknowledge the indication in the Office Action that claims 6-9, 13-15, 17, and 27 would be allowable if rewritten into independent form. However, as discussed below, Applicants respectfully submit that these claims are allowable in their present form. In accordance with the foregoing, claims 2-3, 24-26, and 32-36 have been amended to more particularly point out and distinctly claim the subject matter of the invention. The amendments are not necessitated by the prior art of record. No new matter is being presented, and approval and entry are respectfully requested.

Claims 1-9, 13-15, 17, 21, and 23-38 are pending and under consideration.

REJECTION UNDER 35 U.S.C. § 103:

Claims 2-3, 24-26, and 32-38 were rejected under 35 USC §103(a) as being obvious in view of RFC 2977, U.S. Application No. 2002/0065785 to Tsuda ("Tsuda"), and U.S. Patent No. 6,751,459 to Lee et al. ("Lee"). The Office Action took the position that RFC 2977, Tsuda, and Lee disclose all aspects of claims 2-3, 24-26, and 32-38. It is respectfully asserted that, for at least the reasons provided herein below, RFC 2977,

Tsuda, and Lee fail to teach or suggest the recitations of the pending claims. Reconsideration is requested.

Independent claim 2, from which claims 37 and 38 depend, recites a method including receiving a message from subscriber's user equipment. The message indicates that an address of a certificate provisioning gateway for certificate issuance and delivery procedure in a visited network is requested by the subscriber's user equipment, the certificate provisioning gateway serving at least one certificate authority. The message further contains the address of the certificate provisioning gateway. The method includes obtaining, in response to receiving the message, subscriber's location information maintained in a mobile communication system, and determining on the basis of the subscriber's location information, an address of the certificate provisioning gateway. The method also includes checking whether or not the address of the certificate provisioning gateway received in the message is the same as the address of the certificate provisioning gateway determined on the basis of the location information. If they are not the same, the method uses the address determined on the basis of the location information.

Independent claim 3 recites a method including receiving a message from subscriber's user equipment, the message containing subscriber's location information and indicating that an address of a certificate provisioning gateway for certificate issuance and delivery procedure in a visited network is requested by the subscriber's user equipment. The certificate provisioning gateway serves at least one certificate authority. The method also includes obtaining, in response to receiving the message, subscriber's

location information maintained in a mobile communication system, and checking whether or not the subscriber's location information received in the message corresponds to the subscriber's location information obtained. The method includes using the subscriber's location information obtained for determining the address of the certificate provisioning gateway if the subscriber's location information obtained does not correspond to subscriber's the location information received in the message.

Independent claim 24, from which claims 6-9 and 13 depend, recites a method including receiving a message from subscriber's user equipment, the message containing subscriber's location information and indicating that an address of a certificate provisioning gateway for certificate issuance and delivery procedure in a visited network is requested by the subscriber's user equipment. The certificate provisioning gateway serves at least one certificate authority. The method includes obtaining, in response to receiving the message, subscriber's location information maintained in a mobile communication system. The method includes checking whether or not the subscriber's location information received in the message corresponds to the subscriber's location information obtained, and if the subscriber's location information obtained corresponds to the subscriber's location information received in the message, determining on the basis of the subscriber's location information the address of the certificate provisioning gateway. If the subscriber's location information obtained does not correspond to the subscriber's location information received in the message, the method sends an error indication by using the subscriber's location information obtained.

Independent claim 25, from which claim 27 depends, recites a method including receiving a message from subscriber's user equipment, the message containing subscriber's location information and indicating that an address of a certificate provisioning gateway for certificate issuance and delivery procedure in a visited network is requested by the subscriber's user equipment. The certificate provisioning gateway serves at least one certificate authority. The method includes obtaining, in response to receiving the message, subscriber's location information maintained in a mobile communication system, and checking whether or not the subscriber's location information received in the message corresponds to the subscriber's location information obtained. The method also includes determining, on the basis of the subscriber's location information the address of the certificate provisioning gateway, if the subscriber's location information received in the message corresponds to the subscriber's location information obtained. The method uses the subscriber's location information received in the message if the subscriber's location information received in the message does not correspond to the subscriber's location information obtained.

Independent claim 26, from which claims 14, 15, and 17 depend, recites a method including receiving a message from subscriber's user equipment, the message containing subscriber's location information and indicating that an address of a certificate provisioning gateway for certificate issuance and delivery procedure in a visited network is requested by the subscriber's user equipment. The certificate provisioning gateway serves at least one certificate authority. The method includes obtaining, in response to

receiving the message, subscriber's location information maintained in a mobile communication system, and checking whether or not the subscriber's location information received in the message corresponds to the subscriber's location information obtained. If the subscriber's location information received in the message corresponds to the subscriber's location information obtained, the method determines on the basis of the subscriber's location information the address of the certificate provisioning gateway. If the subscriber's location information received in the message does not correspond to the location information obtained, the method sends an error indication by using the subscriber's location information received in the message.

Independent claim 32 recites an apparatus, including a processor configured to serve a certificate authority in a mobile communication system and to determine, in response to receiving from subscriber's user equipment a message indicating a request for an address of another certificate provisioning gateway for certificate issuance and delivery procedure. The message further contains an address of the other certificate provisioning gateway, an address of the other certificate provisioning gateway on the basis of subscriber's location information maintained in and obtained from the mobile communication system. The processor is also configured to check whether or not the address of the other certificate provisioning gateway received in the message is the same as the address of the other certificate provisioning gateway determined on the basis of the subscriber's location information. If they are not the same, the processor is configured to

use the address of the other certificate provisioning gateway determined on the basis of the location information.

Independent claim 33 recites an apparatus, including a processor configured to serve a certificate authority in a mobile communication system, and to obtain, in response to receiving from subscriber's user equipment a message containing subscriber's location information and indicating a request for an address of another certificate provisioning gateway for certificate issuance and delivery procedure in a visited network, subscriber's location information maintained in the system. The processor is also configured to check whether or not the subscriber's location information received in the message corresponds to the subscriber's location information obtained, and to use the subscriber's location information obtained from the system to determine the address of the other certificate provisioning gateway if the subscriber's location information obtained from the system does not correspond to the location information received in the message.

Independent claim 34 recites an apparatus, including a processor configured to serve a certificate authority in a mobile communication system. The processor is configured to obtain, in response to receiving from subscriber's user equipment a message containing subscriber's location information and indicating that an address of another certificate provisioning gateway for certificate issuance and delivery procedure in a visited network is requested, subscriber's location information maintained in the system. The processor is configured to check whether or not the subscriber's location information received in the message corresponds to the subscriber's location information

obtained. If the subscriber's location information received in the message corresponds to the subscriber's location information obtained, the processor is configured to determine an address of the other certificate provisioning gateway on the basis of the subscriber's location information. If the subscriber's location information obtained from the system does not correspond to the subscriber's location information received in the message, the processor is configured to send an error indication by using the subscriber's location information obtained.

Independent claim 35 recites an apparatus, including a processor configured to serve a certificate authority in a mobile communication system, and to obtain, in response to receiving from subscriber's user equipment a message containing subscriber's location information and indicating a request for an address of another certificate provisioning gateway for certificate issuance and delivery procedure in a visited network, subscriber's location information maintained in the system. The processor is also configured to check whether or not the subscriber's location information in the message corresponds to the subscriber's location information obtained. The processor is configured to use the subscriber's location information received in the message to determine the address of the other certificate provisioning gateway if the subscriber's location information received in the message does not correspond to the subscriber's location information obtained.

Independent claim 36 recites an apparatus including a processor configured to serve a certificate authority in a mobile communication system. The processor is configured to obtain, in response to receiving from subscriber's user equipment a

message containing subscriber's location information and indicating a request for an address of another certificate provisioning gateway for certificate issuance and delivery procedure in a visited network, subscriber's location information maintained in the system. The processor is further configured to check whether or not the subscriber's location information received in the message corresponds to the subscriber's location information obtained, and to determine on the basis of the subscriber's location information the address of the other certificate provisioning gateway, if the subscriber's location information in the message corresponds to the subscriber's location information obtained. If the subscriber's location information received in the message does not correspond to the subscriber's location information obtained, the processor is configured to send an error indication by using the subscriber's location information received in the message.

As will be discussed below, RFC 2977, Tsuda, and Lee fail to disclose or suggest the elements of any of the presently pending claims.

As a preliminary matter, on page 3, the Office Action responded to the arguments submitting that Tsuda and Lee fail to cure the deficiencies of RFC 2977 by submitting that "one cannot show non-obviousness by attacking the references individually where the rejections are based on combinations of references," and cites *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981) and *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Applicants respectfully point out that the Office Action's reliance on *In re Keller* and *In re Merck* is misplaced. The arguments supporting the patentability

of the pending claims support the pattern laid out by the Federal Circuit: identify the deficiencies of the primary reference, and determine whether the secondary reference remedies those deficiencies. *In re Rijckaert*, 28 USPQ2d 1955, 1956-7 (Fed. Cir. 1993). Additionally, as the Federal Circuit has explained, Applicants are not required to show non-obviousness until a prima facie case for obviousness has been established. *Rijckaert* at 1957. Additionally, the arguments being presented do not address a reference in isolation, as done by the applicant in *In re Merck*, nor an affidavit is provided regarding a solitary reference like the applicant in *In re Keller*. Accordingly, Applicants respectfully submit that the arguments comply with the law as set forth by the Federal Circuit.

Referring to the cited references, RFC 2977 generally describes a mobile IP and requirements which would have to be supported by an Authentication, Authorization, Accounting (AAA) service to aid in providing mobile IP services. The basic model described in section 3 of RFC 2977 includes a client belonging to one administrative domain (called home domain) having to use resources provided by another administrative domain (called foreign domain). An agent in the foreign domain that attends to the client's request (call the agent the "attendant") is likely to require that the client provide some credentials that can be authenticated before access to the resources is permitted. The attendant is expected to consult an authority (typically in the same foreign domain) in order to request proof that the client has acceptable credentials.

RFC 2977 identifies the following requirements that have to be supported: Each local attendant has to have a security relationship with the local AAA server (AAAL), the

local authority has to share, or dynamically establish, security relationships with external authorities that are able to check client credentials; the attendant has to keep state for pending client requests while the local authority contacts the appropriate external authority; since the mobile node may not necessarily initiate network connectivity from within its home domain, it MUST be able to provide complete, yet unforgeable credentials without ever having been in touch with its home domain; and intervening nodes (e.g., neither the attendant or the local authority (AAAL) or any other intermediate nodes) MUST NOT be able to learn any (secret) information which may enable them to reconstruct and reuse the credentials.

Tsuda generally describes a function for carrying out AAA processing and authentication and accounting processes carried out between AAA function (AAAM) on a mobile node and a visited network or the mobile node and a home network. See paragraph [0054]. When the mobile node is connected to the visited network, for example, the mobile node 1010 transmits a registration request to the home agent or the AAAH server according a Mobile IP protocol. See FIG. 1 and paragraphs [0061]-[0065].

Furthermore, Tsuda describes that a foreign agent sends periodically an advertisement including its own address (S101), and, thus, the mobile terminal receives the address without requesting. See, at least, FIGS. 10 and 11 of Tsuda. In Tsuda, when the mobile terminal notices that it has changed sub-network, it sends a registration request S102 to the foreign agent using the address the mobile terminal received in the

advertisement. Then, the mobile terminal is authenticated and keys changed, such keys being used to encrypt communication.

Lee generally describes a method and apparatus for nomadic computing by means of transparent virtual networking, information storage, and mobility when the user is traveling from one location to another and/or using different computer platforms or operating modes. Personal mobility domain name service (PMDNS) is originally designed to provide personal mobility via a personal identifier. Because of generic system architecture which uses the Internet as backbone, interoperating with existing access networks, it is also wise to provide nomadic computing services.

However, other than listing requirements, RFC 2977 does not teach or suggest that a message is received from a subscriber's user equipment, where the message would be configured to indicate "that an address of a certificate provisioning gateway for certificate issuance and delivery procedure in a visited network is requested by the subscriber's user equipment, the certificate provisioning gateway serving at least one certificate authority, the message further containing the address of the certificate provisioning gateway," as recited in independent claim 2 and similarly recited in independent claims 3, 24-26, and 32-36. RFC 2977 does not provide a message that would indicate an address of a certificate provisioning gateway for certificate issuance and delivery procedure in a visited network. The description provided in RFC 2977 of various listings of requirements to roaming and related to basic IP connectivity, would not enable a person of ordinary skill in the art to arrive at the claimed invention. Section 4 of RFC 2977

simply lists requirements on AAA services including AAA server MUST be able to obtain or to coordinate the allocation of, a suitable IP address for the customer, upon request by the customer; and AAA servers MUST be able to identify the client by some means other than its IP address. However, there is no teaching or suggestion regarding the address of a certificate provisioning gateway for certificate issuance and delivery procedure in a visited network is requested by the subscriber's user equipment.

Also, section 5 of RFC 2977 is limited to submitting that the AAA server MUST also be able to validate certificates provided by the mobile node and provide reliable indication to the foreign agent. However, similar to other portions of RFC 2977, section 5 does not teach or suggest the particular features of independent claim 2 reciting the "address of a certificate provisioning gateway for certificate issuance and delivery procedure in a visited network is requested by the subscriber's user equipment." Furthermore, neither section 3-5 of RFC 2977 teach or suggest, at least, "determining on the basis of the subscriber's location information, an address of the certificate provisioning gateway," as recited in independent claim 2 and similarly recited in independent claims 3, 24-26, and 32-36.

RFC 2997 fails to teach a certificate provisioning gateway (and a certificate authority), and, therefore, it cannot disclose any feature relating to the certificate provisioning gateway.

If home/foreign authorities are considered as certificate provisioning gateways, although not admitted or suggested to have that kind of functionality by RFC 2977, the

user equipment need not request for their addresses according to the description of RFC 2977. The user equipment knows its home authority address. Further, the user equipment establishes no direct connection to a foreign authority but uses an attendant, whose address the user equipment knows (otherwise, the user equipment could not send any messages to attendant and the user equipment would not obtain a service). The attendant then provides different services in the foreign network, the services including contacts to home authority. According to RFC 2977, the address of the attendant is the only address needed for the foreign network.

As correctly recognized by the Office Action, RFC 2977 fails to teach or suggest, “checking whether or not the address of the certificate provisioning gateway received in the message is the same as the address of the certificate provisioning gateway determined on the basis of the location information; and if they are not the same, using the address determined on the basis of the location information,” as recited in independent claim 2 and similarly recited in independent claims 3, 24-26, and 32-36. To resolve the deficiencies of RFC 2977, the Office Action relied on Tsuda and Lee. However, as will be discussed below, Tsuda and Lee fail to cure the deficiencies of RFC 2977.

However, similar to RFC 2977 alone, a combination of RFC 2977, Tsuda, and Lee would not teach or suggest all the recitations of independent claims 2, 3, 24-26, and 32-36. For instance, RFC 2977, Tsuda, and Lee are silent as to teaching or suggesting, at least, “receiving a message from subscriber’s user equipment, said message indicating that an address of a certificate provisioning gateway for certificate issuance and delivery

procedure in a visited network is requested by the subscriber's user equipment, the certificate provisioning gateway serving at least one certificate authority, the message further containing the address of the certificate provisioning gateway; obtaining, in response to receiving the message, subscriber's location information maintained in a mobile communication system," as recited in independent claim 2. In addition, Tsuda and Lee do not teach or suggest that a message is received from a user equipment requesting the address of a network element. Rather, Tsuda describes sending from a network node advertising messages containing an address without any request from the user equipment.

Also, Tsuda discloses that AAA servers are for authentication, authorization, and accounting, (See paragraph [0004]) and that AAA-H server locates in a home network and AAA-F server in a visited network. Further, Tsuda discloses in paragraph [0186] a certificate authority as a separate entity, not included in the AAA servers, and states that the certificate authority may be used in addition to the AAA servers. Thus, Tsuda describes that AAA-servers cannot be interpreted as certificate authorities. Lee is completely devoid of any teaching or suggestion regarding AAA servers and certificate authorities.

On page 3 of the Office Action, it is submitted that "the mere disclosure of certificate authorities being used is enough to reject the claim since any user of said CA [certificate authorities] would inherently require the designer to include a process whereby they are used to obtain certificates, thus they could be a standalone entity or

incorporated into the AAA server.” However, as commonly understood, the Examiner bears the burden of establishing a prima facie case of obviousness based upon the prior art...”[the Examiner] can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references.” In re Fritch, 23 USPQ 2d 1780, 1783 (Fed. Cir. 1992). In addition, the mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. Id. at 1783-84. “One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.” In re Fine, 837 F.2d 1071, 1075, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988). Therefore, the basis for arriving to the claimed features is improper. As previously indicated, Tsuda describes that AAA-servers cannot be interpreted as certificate authorities. Also, paragraph [0186] of Tsuda, which the Office Action refers, simply provides that “it is also possible to carry out the authentication of the correspondent terminal or the user by using the public key information or the certificate authority in addition.” However, Tsuda does not teach or suggest how the certificate authority can be configured in addition to the checking the host name to carry out authentication. Contrary to the improper conclusory contentions made in the Office Action, it would not be possible for a designer or a person of ordinary skill in the art to configure “checking whether or not the address of the certificate provisioning gateway received in the message is the same as the address of the certificate

provisioning gateway determined on the basis of the location information; and if they are not the same, using the address determined on the basis of the location information,” as recited in the present claims when Tsuda is completely silent as to such functions, except for the general and vague contention that certificate authority may be used for authentication.

Applicants respectfully request that a clear explanation be provided on how a combination of Tsuda, Lee and RFC2977 could teach what to do if they (location information, or addresses) do not correspond to each other, when the examiner admits that the feature is not taught by cited references.

Applicants also respectfully request a clear explanation how identifying a user address and deciding whether or not to contact the home domain, discloses checking whether the received address is the same as the determined one, or checking whether the received location information corresponds to the obtained location information.

Furthermore, independent claim 2 recites a certificate issuance and the certificate provisioning gateway serving at least one certificate authority, whereas Tsuda and Lee relates to routing services. Tsuda and Lee describes how to find a mobile terminal when the terminal has a fixed IP address used as its identification, but the actual IP address of the terminal depends on the terminal's location. Clearly, RFC 2977, Tsuda, and Lee are silent as to teaching or suggesting that a user equipment could use a certificate issuance services of a visited network, or of another network than a home network of the user

equipment. On the contrary, Tsuda describes for example in paragraph [0056] to always contact the AAA server in the home network to authenticate the user.

Furthermore, certificate authorities are provided as separate entities in the present application, and for one skilled in the art a certificate authority is a trusted third party issuing certificates. Thus, one skilled in the art would not interpret an authentication, authorization, and accounting server as a certificate authority issuing certificates, and none of the cited references describe such feature.

A combination of RFC 2977, Tsuda, and Lee would teach away from the claimed invention because the combination would teach all network-related data should be sent in advertise messages. As done in the Office Action, providing that a combination of RFC 2977, Tsuda, and Lee would teach the recitations of the claims is purely based on hindsight. “To support the conclusion that the claimed combination is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed combination. It is to be noted that simplicity and hindsight are not proper criteria for resolving the issue of obviousness.” *Ex Parte Clapp*, 227 USPQ 972, 973 (B.P.A.I. 1985).

Regarding independent claims 6 and 14, paragraph [0069] of Tsuda generally describes accounting and disclosing how subscribers are billed and paragraph [00186] of Tsuda describes that public key information or certificate authority may be used in addition to authentication. However, Tsuda fails to teach or suggest that “an address of a certificate provisioning gateway via which the certificate issuance service is provided in

the other network, the certificate provisioning gateway serving at least one certificate authority, a public key required for the certificate issuance service in the other network, and an indication of the protocol required for the certificate issuance service in the other network,” as recited in independent claims 6 and 14. RFC 2977 and Lee are devoid of any teaching or suggestion providing such features. Based on the description of Tsuda, the certificate authority used locates the home network, or the public key is used for the home network, and, therefore, one skilled in the art would assume that they are stored in the user equipment.

In view of the descriptions of Tsuda and Lee, these references do not cure the deficiencies of RFC 2977. A combination of RFC 2977, Tsuda, and Lee would fail to teach or suggest all the recitations of the present claims. Instead, the combination of RFC 2977, Tsuda, and Lee would simply list requirements that need to be supported by a AAA service to aid in providing mobile IP services, where the mobile IP network could have home zone information and provide home zone services in a subnet using an address of AAAH. However, there is no teaching or suggestion in the combination of RFC 2977, Tsuda, and Lee checking whether or not the address of the certificate provisioning gateway received in the message is the same as the address of the certificate provisioning gateway determined on the basis of the location information; and if they are not the same, using the address determined on the basis of the location information.

Accordingly, in view of the foregoing, it is respectfully requested that independent claims 2, 3, 24-26, and 32-36 and related dependent claims be allowed.

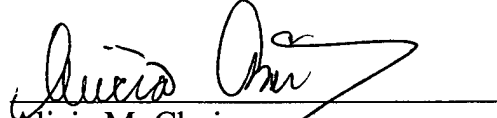
CONCLUSION:

In view of the above, Applicant respectfully submits that the claimed invention recites subject matter which is neither disclosed nor suggested in the cited prior art. Applicant further submits that the subject matter is more than sufficient to render the claimed invention unobvious to a person of skill in the art. Applicant therefore respectfully requests that each of claims 2-3, 24-26, and 32-38 be found allowable and, along with allowed claims 6-9, 13-15, 17, and 27, this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicant's undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Alicia M. Choi', is written over a horizontal line.

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Petition for Extension of Time
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